# A New Species of Mysid (Mysidacea: Crustacea) from the Brisbane River

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*Price: Three Shillings*

University of Queensland Papers
Department of Zoology
Volume II Number 4

THE UNIVERSITY OF QUEENSLAND PRESS
St. Lucia
13th November, 1963

WHOLLY SET UP AND PRINTED IN AUSTRALIA BY
WATSON, FERGUSON AND COMPANY, BRISBANE, QUEENSLAND
1963

REGISTERED IN AUSTRALIA FOR TRANSMISSION BY POST AS A BOOK

# A NEW SPECIES OF MYSID (MYSIDACEA: CRUSTACEA) FROM THE BRISBANE RIVER

## INTRODUCTION

Dr. O. S. Tattersall (1957) described several species of *Rhopalophthalmus* when she found large numbers of the genus in the Sierra Leone River. These clearly belonged to two species, and she stated, "yet so incomplete was the existing description of *Rhopalophthalmus egregius* that, had I encountered one of the Sierra Leone forms alone, I should have referred it to Hansen's species whilst pointing out certain characters in which it showed variation from previous descriptions". She then made a comparative study of all the material that had been referred to *R. egregius* to which she had access. She found that material previously referred to *R. egregius* Hansen could be separated into six different species, *R. dakini* Tattersall 1957 being the one from Australian waters. This had been recorded from Lake Illawarra (Tattersall, 1940) and also doubtfully the Great Barrier Reef (Tattersall, 1936).

During an investigation of the mysids in the Brisbane River for the period January, 1960 to May, 1961, a species of *Rhopalophthalmus* other than *R. dakini* was obtained in large numbers, and this species is as yet undescribed. It appears to be an estuarine species with salinity preference of 12.5-33$^0/_{00}$. The peak populations were found to be in late summer when breeding occurs.

***Rhopalophthalmus brisbanensis*** sp. nov.

(Figs. 1, 2)

*Material.* Ten mature specimens of each sex were examined.

*Holotype.* ♂ 10 mm long deposited Queensland Museum. Reg. Nos. W2051, W2052.

*Carapace.* Anterior margin of carapace between post-orbital spines slightly convex, no rostral projection; post-orbital spines small and keels very feebly developed; "cheeks" slightly sinuous; antero-lateral angles acutely pointed and produced beyond the level of the post-orbital spines (fig. 1A).

*Antennules.* More robust in male than in female, with a large hirsute base to outer flagellum of antennules of male; hooked setae on male and plumose setae on female, on inner margin of third segment (figs. 2A, B).

*Antennal scale.* About five times as long as broad, and slightly longer than antennal peduncle; inner distal angle of sympod armed with four spines, the smaller ones being ventral to the larger ones (fig. 2C).

*Mandible.* Asymmetrical and with a well armed palp (fig. 2D).

*Maxilla* 1. Serrated spines on lobe of first segment (fig. 2E).

*Maxilla* 2. As per Hansen (1910) (fig. 2F).

*First thoracic appendage.* Strong endopod with many spines on inner edge; endite of basis strongly armed (fig. 2G).

*Second thoracic appendage.* Very strongly armed dactylus with a long, strong nail and spines; propodus with a row of strong spines at inner distal margin forming a small cage with dactylus. Large spines have double row of secondary spines giving a pectinate appearance (fig. 2H).

*Third to seventh thoracic appendages.* Propodus of endopod subdivided, but not in consistent ratios (figs. 1B, C).

*Eighth thoracic appendage.* Endopod shows sexual dimorphism; in the male, two-segmented (segments at right angles), six to seven plumose setae at bend, three to four setae on terminal segment; in female, slender one-segmented, with usually one spine about halfway along; both male and female endopods about equal in length to basal segment of exopod (figs. 1D, E).

*Pleopods.* As in general description of Tattersall (1957) (figs. 1F, G, H).

*Uropods.* Long and slender; telson about three-quarters length of uropods (fig. 1J).

*Telson.* Approximately three times as long as broad at base; distal half of lateral margins armed with twelve–fourteen spines of which the more proximal are extremely small; of the four apical spines the outer pair are slightly longer than the inner pair (fig. 1K).

*Size.* (Length of anterior margin of carapace to distal end of telson). Largest specimen male 10 mm, female 12.2 mm.

## REMARKS

This species may be distinguished by:

1. anterior margin of carapace being slightly convex.
2. four spines on antennal sympod.
3. larger endopods of eighth thoracic appendage, with more spines on the male, endopod of female one-segmented.

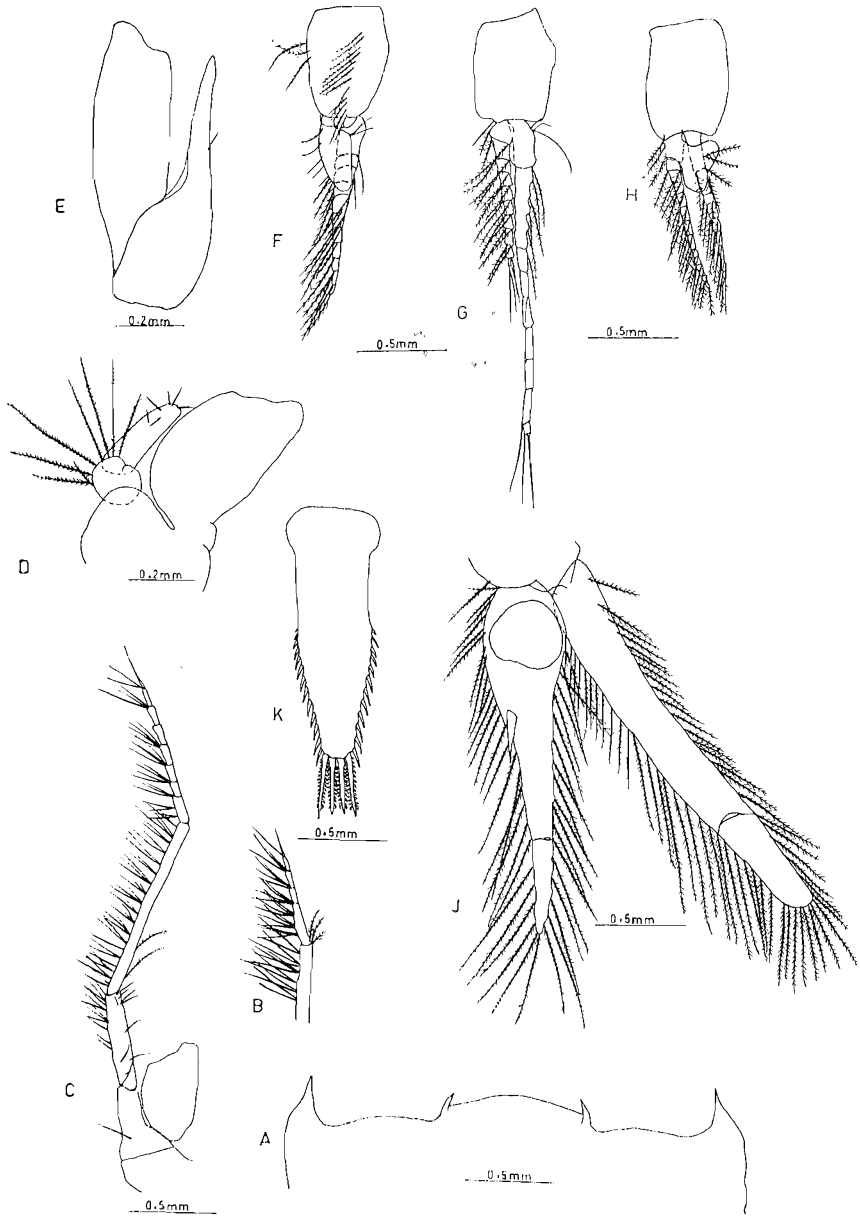


FIG. 1.—*Rhopalophthalmus brisbanensis* sp. nov.

A, anterior margin of carapace; B, distal end of left third thoracic endopod; C, endopod of left seventh thoracic appendage; D, endopod of left eighth thoracic appendage ♂; E, endopod of eighth appendage of ♀; F, first pleopod ♂; G, second pleopod ♂; H, third pleopod ♂; J, left uropod, ventral; K, telson.


FIG. 2.—*Rhopalophthalmus brisbanensis* sp. nov.

A, dorsal view of right antennule ♀; B, dorsal view of right antennule ♂; C, antenna; D, mandibles; E, maxilla 1; F, maxilla 2; G, endopod of left first thoracic appendage; H, endopod of left second thoracic appendage.

The inconsistency of the number of subsegments of the propodus of third to seventh thoracic endopods is unusual. Tattersall (1957) stated "an examination of large numbers of specimens proves that very little, if any, individual variation occurs in animals coming from the same locality. On the contrary, they are surprisingly constant especially as regards those characters which I now put forward as being of significance."

No record is made anywhere of the lanceolate spines on the lobe of maxilla 1.

No *Rhopalophthalmus* were recorded from Lake Macquarie which is a similar lake to Lake Illawarra, but north of Sydney (Kott, 1955).

The following key is adapted from Dr. O. S. Tattersall (1957) to take the new species, *Rhopalophthalmus brisbanensis.*

## KEY TO THE SPECIES OF THE GENUS *RHOPALOPHTHALMUS* ILLIG

Eyes very slender and longer than antennular peduncle .. .. .. .. .. *R. flagellipes* Illig

Eyes large and thick, not extending beyond distal margin of second segment of antennular peduncle .. .. .. .. .. 1

1. Two median dorsal nodules present on carapace; small triangular rostrum present .. .. .. .. .. .. .. .. 2

   No dorsal median nodules on carapace; anterior margin straight or very slightly convex; no definite rostrum .. .. .. .. 6

2. Rostrum very short; antennal scale longer than antennular peduncle; propodus of fourth to seventh thoracic endopods with more than three subsegments .. .. .. .. .. .. .. 3

   Rostrum in form of short, obtuse triangle; scale shorter than, or equal to, antennular peduncle; two long, strong spines on inner distal angle of antennal sympod; two to three subsegments in propodus of third to seventh thoracic endopods .. .. .. .. .. 4

3. Scale seven times as long as broad; two long spines on inner angle of antennal sympod; propodus of fourth to seventh thoracic endopods with six to seven subsegments; eighth thoracic endopods unsegmented .. .. .. .. *R. terranatalis* Tattersall

   Scale five times as long as broad; three long, graduated spines on inner angle of antennal sympod; eighth thoracic endopods with incipient articulations; propodus of fourth to seventh thoracic endopods with three to five subsegments .. .. *R. egregius* Hansen

4. "Cheeks" of carapace sinuous; propodus of fourth to seventh thoracic endopods three-segmented; eighth thoracic endopods short, stumpy and unsegmented; telson very long .. .. *R. longicauda* Tattersall

   "Cheeks" of carapace evenly concave; propodus of fourth to seventh thoracic endopods with two or three subsegments .. .. .. 5

5. Propodus of fourth to seventh thoracic endopods two-segmented; eighth thoracic endopods in both sexes very long, straight, and unsegmented .. .. .. .. .. .. *R. kempi* Tattersall

   Propodus of fourth to seventh thoracic endopods three-segmented; eighth thoracic endopods of male two-segmented, of female unsegmented; telson spines unusually long .. .. *R. orientalis* Tattersall

6. Anterior margin of carapace straight; "cheeks" sinuous; thirteen small spines on inner angle of antennal sympod; propodus of fourth to seventh thoracic endopods with four to six subsegments; eighth thoracic endopods of male short, three-segmented, bent, and of female, two-segmented .. .. .. .. .. *R. dakini* Tattersall

   Anterior margin of carapace not straight .. .. .. .. 7

7. Anterior margin of carapace produced into a very short obtuse triangle; "cheeks" evenly concave; one long spine on inner distal angle of antennal sympod; propodus of fourth to seventh thoracic endopods with three subsegments; eighth thoracic endopods short and thick, two-segmented in male, unsegmented and stumpy in female; telson short, broad, with six to eight lateral spines .. .. *R. africana* Tattersall

   Anterior margin of carapace slightly convex .. .. .. .. 8

8. "Cheeks" evenly concave; three long spines on inner angle of antennal sympod; eighth thoracic endopods long, three-segmented, and bent in male, unsegmented and straight in female; propodus of fourth to seventh thoracic endopods with three to five subsegments .. .. *R. chilkensis* Tattersall

   "Cheeks" sinuous; four spines on inner angle of antennal sympod; eighth thoracic endopod of male two-segmented and bent, of female one-segmented .. .. .. .. .. *R. brisbanensis* sp. nov.

## REFERENCES

HANSEN, H. J. (1910). The Schizopoda of the Siboga expedition. *Siboga Exped.* **37:** 1-123.

KOTT, PATRICIA (1955). The zooplankton of Lake Macquarie, 1953-1954. *Aust. J. mar. freshw. Res.* **6**(3): 429-42.

TATTERSALL, O. S. (1957). Report on a small collection of Mysidacea from the Sierra Leone estuary together with a survey of the genus *Rhopalophthalmus* Illig and a description of a new species of *Tenagomysis* from Lagos, Nigeria. *Proc. zool. Soc. Lond.* **129:** 81-128.

TATTERSALL, W. M. (1936). Mysidacea and Euphausiacea. *Sci. Rep. Gr. Barrier Reef Exped.* **5**(4): 143-76.

TATTERSALL, W. M. (1940). Report on a small collection of Mysidacea from the coastal waters of New South Wales. *Rec. Aust. Mus.* **20:** 327-40.